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AUTHOR Beam, Paul
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ABSTRACT

This CCMIT English module used most of the interrelated devices of sound, sonic pen, keyboard, slide, and terminal display in a lesson which, depending on the student's interest and ability, might last from four to ten hours and formed an integral part of a second year course in critical analysis. Four contexts were included in the subject of analytic criticism: linear, setting, imagery, and structure. Students were allowed to review within and across categories, and to seek out additional information at any point in the lesson. Complete records were kept of learner responses, and analyzed at the degree of statistical function requested. Results of student performance were high in comparison with the results from control groups in conventional lecture/tutorial situations. Student reactions varied between acute frustration over technical delays to strong feelings of accomplishment and an awareness of materials and methods more complete than any single previous learning experience. (Author/JEG)

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COMIT ENGLISH MODULE

by

Paul Beam

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COMIT ENGLISH MODULE

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Paul Beam

Associate Professor

Department of English

Abstract: Purpose of Module - The module is designed to teach analytic method to second year English students in a required course and it requires (depending on student's ability) between four and ten hours of study. It permits a more thorough presentation and review of the lesson than is presently available in any other form.

Structure of Module - The subject of the module is Analytic Criticism and involves four contexts - Linear, Setting, Imagery, Structure. Students may review within and across categories and seek additional information at any point in the lesson. Both voice recording and visual display combine to teach sequences of the lesson and the student is required to respond to points throughout; records are kept of all responses from keyboard and light pen.

Assessment - Throughout the lesson, student responses elicit author comments on the correctness and completeness of each response. Since all responses are recorded, the author can obtain a complete record of each student's performance. This data can be made available to the student for self-evaluation and provides a cummulative data base for subsequent authors to predict student performance. In addition, the COMIT module has some unique memory features which permit the author to check, for example, the time taken to respond or the sequence of answering questions.

Problems - technical, pedagogical and instructional - Response time by the unit is critical - it must be instantaneous, as fast as the student can write, draw or type. Failures here were my greatest frustrations. Next were difficulties in synchronizing audio and visual signals to link the two responses to student requests. Both of these are resolvable by changes in equipment. Results of student performance have been high in comparisons with control groups in conventional lecture/tutorial situations. Personal responses have varied between acute frustration over technical delays to strong feelings of accomplishment and an awareness of materials and methods more complete than any previous learning experience in isolation. Students have not been "isolated by the machine". The questions they now ask are academic responses to the work at a high level.

The COMIT English module uses most of the interrelated devices of sound, sonic pen, keyboard, slide and terminal display in a lesson which, depending on the student's interest and ability, may last from four to ten hours and which forms an integral part of our second-year course in critical analysis.

From the outset I sought to present a combination of a lesson, a test and a means of detailed assessment which would permit (or oblige) a student to learn more by his or her involvement in the lesson that I could provide in a similar period of classroom time. I hoped that the user would be able to examine in detail those areas which seemed to best offer insights into the methods of analysis and I planned to watch over the students' reactions and choices of direction using the whole range of the machine's ability to record, time and compare statistically the user's performance. Throughout the project I have regarded the module - the student's use and development of the material under the lesson's direction - as yet another extension of my teaching method. Over the years I have become increasingly aware of the advantages to students in selection of learning time, the ability to reuse lecture material for greater comprehension and review and the permanence of records which are present in the simple expedient of recorded lectures. The Correspondence Program further taught me the advantages of several new kinds of organization of individual lessons and of the whole pattern of a course. I was anxious to extend this into a more sophisticated lesson and COMIT offered this possibility.

Finally, class size and the kinds of unwarranted assumptions an instructor must make about "average" levels of training and preparation, the "average" number of illustrations one should use to walk between a class's boredom and confusion, the degree of "participation" one can permit in a contest with the clock and the reactions of the class as a whole - these questions made me seek answers in kinds of teaching over which the individual student had greater control and to which he or she was obliged to make many contributions. The idea of the student constructing the lesson with emphases on areas of best understanding at an optimum rate of progress seemed to be a good adjunct to my teaching in the course.

As in most disciplines, large areas of English lend themselves to facts and concepts - "genres" are categories of similar structures, "periods" presume similarities by chronological proximity. I tried to avoid these completely and chose instead part of a course in which two thirds of the students' year mark is derived from material which can be read orally in twenty minutes. The point of the course is to have readers become aware

of the levels of meaning which function along with, but are distinguishable from, textual meaning - the level of grammar, vocabulary and the formal conventions of language. In effect, I must teach material and method in which internal relationships among words are at a premium and external details often have no importance - the name of an author, the date of composition, the edition, are often extraneous and detrimental to this kind of analysis. My question then became: "Is it possible to have the module provide a more complete and effective instruction in both these levels of meaning and in the techniques by which we come to see them than I can in a conventional lecture?"

I chose a passage which I knew well, in part because it had a wide applicability and a minimum of historical or social context. Another factor in my preparation was my increasing unease and annoyance that students would not admit - might not even be truly aware of - their unfamiliarity with the very basic concepts of language in which this area of study is based - questions of punctuation, vocabulary, and syntax in the ordering and sequence of words. The value of the course lies in their coming to see that the higher level of meaning, to which they are often subjectively sensitive, lies in their subconscious uncritical assimilation of these details; as they begin to understand that they can separate what they "feel" about a given piece of writing from what they can objectively demonstrate as being present in the work and accessible to all readers, why, then their critical souls stand up and are counted and they begin to function as students of language.

Now, this kind of insight arrives at different times, in different ways to the many different backgrounds and abilities present in each section. And the kinds and degrees of detail which an instructor can incorporate into a lesson can be guaranteed to bore some and confound others. For instance, under what circumstances is meaning altered by the use of a semicolon instead of a comma or, alternatively, a period, between two clauses? Like other answers, this can be important in determining meaning but it can also oblige me to waste the time of the majority of my class if I must explain it, or to help them learn little if I presume incorrectly that they know it. I can be sure if I ask publicly that they will deceive me. One of the strikingly simple functions the computer model offers is a glossary, accessed simply

by typing the word or phrase of every item in the passage and in the teaching terminology of the lesson. The results have been that students have selected, in precisely the situation of their needing them most, all of the definitions of which they were unsure and about which they almost never would ask in class. Some hundred and twenty entries in the computer records contrast with only three similar requests in the lecture section by the control group in my most recent survey. As students request material not included in the glossary I can add it at my discretion and expand and correlate current material as it applies. A further application of this kind of information is as directives to individuals where a series of notes attached to an answer in vocabulary can direct the user to relate the definition specifically to other parts of the passage and lesson or to consider critical sources which treat the question in greater detail or in alternative ways - questions of connotation, etymology, and phonetics. The areas of expansion are as large as the instructor's imagination and the user's desire for information. None of these functions is available in the present option of a dictionary - a tool which students who require it most presume in any event a priori they have no need to consult.

The module has the facility in most of the areas of my conventional lesson to be both more complete and more specific to the student's request than I can be, certainly in class and often in a tutorial session as well. When users are content with some three meanings and four examples in a question of punctuation clearly set forth on the screen, they simply depress the "Return" key and proceed - an option they surely must have wished they had on past occasions when they asked me personally for this information.

Because the module does not have the kinds of time restraints of a fifty-minute class it never permits me the luxury of explaining that "I would like to be able to go into this subject in greater detail but it is 9:20 and another class requires the room." As an instructor I am obliged to both define the lesson and to then meet those definitions with a completeness that explains each part and connects the parts to each other in the whole; fortunately this also permits me to move more freely among, and make connections across, features like grammar and rhyme, the devices of imagery and the elaboration of setting, but I can make these effectively for each user as his or her responses indicate an understanding of them.

Inadequate responses elicit a suggestion from me to review the material, very poor responses require it. Good and complete work receives a mechanical note of praise and, on occasion, the recommendation to further explore the topic in the library through appropriate readings. I would like to expand the function of incorporating particularly good student responses and insights at each level of the work; this would hardly constitute "discussion" in the classroom sense of the word but it represents Arnold's meaning of "the best that has been thought and said" more accurately than the dialogue in class which promises so much at the outset but which then goes on to illustrate the outer fringes of the tangential and the banal. If the module lacks the spontaneity of in-class discussion, it retains control of the quality of student response and can show at every stage edited examples of fine student work.

The machine's capacity to retain these responses accurately in forms and lengths of the instructor's choosing and to present them as each student shows a need or a desire to consider them is a clear advantage over my less than total teaching recall, no matter how familiar I am with all aspects of the work in hand.

Some of my best results have come from users' involvement in the lesson. In fact, "lesson" with its connotations of someone showing someone else how to understand or to perform certain functions, is a slightly misleading term. In this case the student is presented with an unpunctuated, unspaced version of the passage and is asked to reconstruct it into a form which is optimally comprehensible to a second reader. The student, in effect, comes to know the passage by his or her own best efforts and I have the added advantages of their coming to see for themselves that formal devices like "rhyme" or "stanza" not only do not function, but are not even present, unless they are perceived by the reader. From the most basic devices of vocabulary, grammar and punctuation it is possible to demonstrate, by the student's reconstruction, that "meaning" is a complex interrelationship of separable, definable parts and it is possible to do so by having each individual construct that meaning by the rules which govern the particular categories within which he or she is working. A copy of the passage in its final, punctuated form is included at the end of this paper.

To illustrate, at the level of vocabulary, the student is asked simple comprehension questions at the outset. Is one aware of location of setting, times of day and season, objects and creatures referred to in the passage?" Responses in each category span the obvious to the complex so that everyone notes the terms "winter" and "thorn"; fewer list "lawn" and only the best perceive that leaves, to be seen as green, require the brightness of sunlight in daytime. The game is simple enough and the sonic touch pen, with the capacity to modify and delete as well, is an accurate and direct way of indicating an answer and having it appear on the record. The ability to have one's answers checked by the instructor's selections appearing immediately on the screen on request, in a contrasting colour, is a decided advantage to either the student waiting to see my answers before thinking about the question or waiting until I have an opportunity to mark and return work in a later class and a different context. I grant that the student loses the advantage in many cases of being able to ask immediately why I regarded a certain response as incorrect but to compensate I can provide a prerecorded explanation of each of my selections so that a touch of the pen to any of my answers elicits a statement (graphic, written and/or verbal) which expands on why I selected it and how it relates to the area of our study.

At this point permit me to note one of the frequent benefits to my conventional teaching from this kind of design. In a given teaching situation it would appear at first glance that the student responses and kinds of questions are as infinite as the imaginations which form them. Where I have been put to the necessity of tabulating these, I have discovered that the vast majority resolve themselves into several questions, a significant number of which can be anticipated and answered. In the case of this lesson, I had marked several hundred analyses and discussed them in regular classroom situations prior to ever asking students to consider them on the module. Genuinely new users' questions are infrequent and unanticipated responses almost never occur. When they do, by the capacity of the machine, I receive them and can answer them for subsequent use if they merit it and respond to the student in light of them

at the earliest opportunity. In any event, the student's very request serves as a record for future use and as a constant form of check on a pedagogic structure which is thus improved in comprehensiveness and quality by use.

At the simpler levels of comprehension and grammar these interactions among machine, student and instructor are very direct and usually are brief and definitive. And it is on these apparently simple questions and the responses to them that the student gains confidence and a sense of a larger unity of meaning. Out of questions about times of day and man-made objects (five or seven? and the machine can be as flexible and reasonable as I am with as good reasons in matters of spelling, definitions or image patterns), I can illustrate the emergence of the complex, interrelated structures of setting and imagery and the unstated reader assumptions of a diffident sophisticated, intelligent narrator whose vocabulary, syntax and powers of expression intimidate the reader and convince you and me that we are content to listen to him without having to engage in an argument about a subject to which he refers on some thirteen occasions without ever naming - the question of his death.

But such a view emerges by degrees from some six hours of study, on average, and it emerges because the student is obliged to make the connections at all levels under the direction, by questions and statements, of the module.

Devices of colour and sequence, so that my answers compare in red and contrast in blue with student responses, of variations in tone of voice, across the speaker matched to visual displays by light emphasis to illustrate how intonation can alter meaning, of the student's options to review material immediately or request additional information, of the alteration and supplementing of audio and visual displays, of the masking and accentuating of contrasting parts of the passage, of the development in sequence or in degree of emphasis of image patterns and their influences on meaning, of the ability to supplement the verbal definition of an object with an illustration of it, in motion if so desired, and the additional information that relates it to other work in the passage - these are all developments of the kinds of aids to teaching which good organization and

imagination can bring into the classroom and can, good fortune prevailing, on occasion "bring off". The ability to duplicate a good performance at the next presentation is even more rare. The module, too, can malfunction but here the problem is technical and all the student has lost is a segment of time which can be made up at no academic penalty as soon as the system is "up" again with all its pedagogic pennons flying.

It is already obvious that a structure this complete places a new degree of responsibility on the student. Since the machine is more flexible in its hours, patience and direction than the instructor, the students' good faith almost ceases to be a consideration. The same system which records degrees of correctness and completeness also notes the amounts of time spent from the placing of one punctuation mark and the next to the totals spent in each section and the module as a whole. "Class attendance" has never been less of a problem.

As in a lecture situation, the instructor ultimately chooses the degree of proximity to each student. The machine need neither narrow nor extend that gap, nor does it in and of itself separate the learner from the teacher. It has not done so in my experience. What I have appreciated is that when students discuss material with me, the level of our consideration is very high simply because the thoroughness of presentation means that repetitious and obvious questions are already answered and what remain are the interesting areas where no simple solution exists. These are often the meeting points of theory and practice where we talk now from a wider basis of shared experience.

The second advantage in individual discussions is the very complete marks record which the machine provides - a record far beyond the best endeavours of both student and instructor to supply manually. Not only does it keep this record but it analyses it at any degree of statistical function which I am capable of requesting. The results for my field are significant. For the first time we have been able to consider the sequence and duration of how a reader comes to orally stress a given passage - to consider in effect how it comes to have meaning among its units. As far as I know this kind of research has not been done before because the

methods of assessment have not been available.

But of greatest use to the student immediately is the clear record of choices, categories and patterns by which any reader derives the meaning of the passage. Errors or deficiencies in the final essay presentation can be seen in the progress across responses which led up to them. Obviously, the positive aspects of this are equally true. Successful patterns lead to successful expression and students can extrapolate and apply the methods on subsequent analyses. The records are cumulative and allow me to compare an individual accurately to a group and to plot long term effects of the way I have expressed parts of the work and to check teaching effectiveness by modifying them. The preparation of the module has permitted me to review my teaching techniques and reconsider what I am doing and how I can consider improving it.

The kinds of problems unique to COMIT are few but large. Technical efficiency is crucial and the complexity of functions within my module made this its major fault. In its present form the synchronization of screen display and sound recording is unreliable; the best slides, where resolution and distinction among close colour patterns is paramount, have deteriorated. In a few circumstances the machine's inability to discriminate among student responses on the screen surface has invalidated performance records and angered users as they saw their carefully derived conclusions applied to completely inappropriate phrases in adjacent lines. Most frustrating are delays in machine response time to student decisions and requests. Not only do these make records of time study useless but, more importantly, they frustrate the user more than all other factors combined. Pedagogic questions of the optimal combinations of visual display, text and audio explanation have been resolved to my satisfaction but experience in this area has been hard-won in terms of time involved.

The solution of how to adapt the module to users with no previous experience with computers, typewriters, sonic pens or programmed learning were tackled and resolved by the project organizers from the outset. I still wince at the phrase "Simple enough for Artsies!" but I realize its importance.

Student response has been mixed. Initial trepidation generally gives way in the second session to a giddy, unwarranted sense of being master of all things electronic. My initial fears of users feeling at sea or of being manipulated by the lesson have been unfounded. I am aware of the optimism that equates novelty with a teaching breakthrough but I have also experienced the pleasure of students genuinely asking for additional material (of which none exists) and of suggesting ways in which this technology could be applied to their other studies. Their frustrations have been almost exclusively with malfunctions of equipment though, as I applied the lesson to more junior students, some felt and demonstrated in their results that the level of the work was beyond them. On the positive side several among the various groups saw the method as the most powerfully persuasive of any they had met in their training. What has clearly emerged is the need now to provide a greater range of related material to see if the technique can be applied as successfully beyond a specific lesson as a sustained method of teaching in its own right.

Because I have been asked repeatedly about it I must comment on the demands on time and resources this kind of preparation places on an instructor. Almost all phases of the programming have been done for me accurately and with despatch by the COMIT group and I am aware of, and thankful for, the blessing. The questions I asked, the progression of teaching and illustration and the responses I incorporated all derive from, and are compatible with, teaching I have in progress and the results I have obtained have been new ways of testing and confirming my ongoing work in the classroom. The extensive and thorough recording and marking have given me both new insights into the ways readers perceive the passage and suggestions for how I might more effectively present the work to a class. On balance then, the preparation has been neither odious nor overwhelming. Major changes in format have been accomplished often by the expedients of clearly marking on the print-out what segments I wished to have removed from the screen and recorded on audio tape or of matching appropriate slide displays to correspond with student requests. Presuming the level of programming support - one supervisor and two students - much of my subsequent development time would remain collateral with that allotted for lesson

development. The many kinds of cross-fertilization between module and classroom further increased the value of the project; I believe that would continue to be true in subsequent work.

Within the materials and methods of my discipline this kind of teaching has, to my mind, an unlimited application. I have already indicated that the area I selected for experiment would not seem at first glance to be a logical starting point. It involves a good deal of theory, employs more method than fact, requires subtle distinctions among many levels of language and involves choices in personal taste and judgement. I presume, because the module can be rendered flexible enough in both its presentation of material and its ability to discriminate among answers, that an author would encounter fewer difficulties presenting more established or traditional fare in the history or genres of our subject. Because this module incorporates aspects of different parts of our discipline - linguistics, etymology, structure, social context, to list several - and because it integrates them successfully, I would presume that they could be expanded and successfully developed in other subject matter. As well, the need to develop a body of common devices - the glossary, definitions and applications of critical terms and the like - will decrease as authors discover that they can draw on previously prepared material. So the future uses in my subject area are limited only by our acceptance of the method and our willingness to work in it.

But I wish to conclude my remarks by returning to what I regard as central in our concern in this work - the ways in which the student, the end of our efforts, benefits by its use. It is here, more than in any other feature, that the module's value lies--in the individual's being required to create the answers to questions which form the lesson, of having to be responsible for, not merely listening to, or passively watching, the lesson. The machine is rigid in its demands for answers and in its unremitting record of performances. It permits review in ways an instructor cannot; it is designed to encourage the user to consider and explore relationships in models not available in the classroom; it incorporates opportunities for students to comment on, and to ask larger questions about, the subject and method. But, after all is said and done,

it is uncompromising in its insistence that each user meet each of its questions, puzzles or requests for knowledge and structure and it will not proceed on the happy assumption that the person sitting in front of it actually does understand and declines to answer because the question is not of sufficient interest.

At the outset my purposes in COMIT were twofold; I sought a teaching device which made no compromise with the best academic standards of my subject and which involved the student at each stage of the lesson more directly than the conventional lecture method can. It is not a question of belief but rather a matter of fact that modules of this kind meet both conditions. Questions of their role vis a vis an instructor, how much of this kind of instruction is optimal, the demands on academic resources in their implementation, matters of cost and the social and pedagogic research we derive are all, in the long run, peripheral. The project's value lies in its thoroughness and the ability to have students take charge of their own learning; Any module's flexibility, across and within disciplines, depends only on the imagination and skill of the authors and designers who create it. Not only in COMIT, but in other systems already functioning in higher education, the only functioning adverb is not "how" or "whether" but "when."

References:

[1] P. Beam, "Comparative Teaching Techniques: A Computer Module and Criticism", U.C.T. Studies in English, Cape Town, South Africa, Vol. 7, pp. 76-98, Sept., 1977.

[2] P. Beam, "The Design of a Computer-Directed Teaching Module in Analytic Criticism",Third International Conference on Computing in the Humanities, University of Waterloo, August 2-5, 1977.

[3] Eileen Elkeer, "The COMIT Project: An Executive Overview", a report prepared for The Educational Research Division, I.B.M. Canada Ltd., May, 1978.

Appendix: The passage used in the COMIT English module on Analytic Criticism is shown below:

**When the Present has latched its back-gate behind my trembling stay,
And the May month flaps its glad green leaves like wings,
Delicate-filmed as new-spun silk, will the neighbours say,
"He was a man who used to notice such things?"**

**If it be in the dusk when, like an eyelid's soundless blink,
The evening-hawk comes crossing the shades to alight
Upon the wind-warped upland thorn, a gazer may think,
"To him this must have been a familiar sight."**

**If I pass during some late night blackness, mothy and warm,
When the hedgehog travels cautiously over the lawn,
One may say, "He worked that such innocent creatures should come
But he could do little for them; and now he is gone." to no harm,**

**If when hearing that I have been stilled at last, they stand at the door,
Watching the full-starred heavens that winter sees,
Will this thought rise on those who will meet my face no more,
"He was one who had an eye for such mysteries?"**

**And will any say when my bell of leaving is heard in the gloom,
And a crossing breeze cuts a pause in its outrollings,
Till they rise again, as they were a new bell's boom,
"He hears it not now, but used to notice such things?"**